

WHAT WE CLAIM ARE:

1. An information recording apparatus for recording information by radiating a laser beam on a disc, comprising:

a disc driver for selectively executing a constant linear velocity mode
5 of driving the disc at a constant linear velocity and a constant angular velocity mode of driving the disc at a constant angular velocity;

a laser optical system for radiating a laser beam on the disc; and
a controller for detecting a laser power of the laser beam radiated by said laser optical system and controlling the laser power of the laser beam radiated
10 by said laser optical system in such a manner that the detected laser power becomes equal to a target value of a laser power to be radiated,

wherein said controller sets a response speed for changing the laser power toward the target value during recording in the constant angular velocity mode slower than a response speed for changing the laser power toward the
15 target value during recording in the constant linear velocity mode.

2. The information recording apparatus according to claim 1, further comprising a target value setter for changing the target value in accordance with a linear velocity at a record position of the disc during recording in the constant angular velocity
20 mode.

3. The information recording apparatus according to claim 1, wherein said disc driver drives the disc in the constant angular velocity mode during recording of the disc until the linear velocity at the record position reaches a predetermined velocity,
25 and drives the disc in the constant linear velocity mode after the linear velocity reaches the predetermined velocity.

4. An information recording apparatus comprising:

a disc driver for selectively executing a constant linear velocity mode of driving a disc at a constant linear velocity and a constant angular velocity mode of driving the disc at a constant angular velocity, when information is recorded in the disc by radiating a laser beam on the disc;

a laser optical system for radiating a laser beam on the disc;

a detector for detecting a laser power of the laser beam radiated by said laser optical system; and

10 a processor provided with software for controlling the laser power of the laser beam radiated by said laser optical system in such a manner that the laser power detected with said detector becomes equal to a target value of a laser power to be radiated, said processor setting a response speed for adjusting the laser power toward the target value during recording in the constant angular
15 velocity mode slower than a response speed for adjusting the laser power toward the target value during recording in the constant linear velocity mode.

5. A driving method for a recording medium, comprising the steps of:

20 (a) judging a record start instruction for a disc;
(b) judging whether a record position is in a constant angular velocity area;

(c) instructing a constant angular velocity drive and setting a first servo gain, if the record position is in the constant angular velocity area;

25 (d) detecting a transition from the constant angular velocity area to a constant linear velocity area; and

(e) instructing a constant linear velocity drive and setting a second servo gain larger than the first servo gain, if the transition is detected.

6. The driving method for a recording medium according to claim 5, further

5 comprising the step of:

(f) instructing a constant linear velocity drive and setting a second servo gain larger than the first servo gain, if the record position is not in the constant angular velocity area.

10 7. A program for making a computer execute a driving method for a recording medium, the program comprising the processes of:

(a) judging a record start instruction for a disc;

(b) judging whether a record position is in a constant angular velocity area;

15 (c) instructing a constant angular velocity drive and setting a first servo gain, if the record position is in the constant angular velocity area;

(d) detecting a transition from the constant angular velocity area to a constant linear velocity area; and

(e) instructing a constant linear velocity drive and setting a second
20 servo gain larger than the first servo gain, if the transition is detected.

8. The program according to claim 7, further comprising the process of:

(f) instructing a constant linear velocity drive and setting a second servo gain larger than the first servo gain, if the record position is not in the

25 constant angular velocity area.